

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/670,014	FRANK ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Usman Khan	2622	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 4/24/2007.
2. ☒ The allowed claim(s) is/are 1-20.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All   b) ☐ Some\*   c) ☐ None   of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
  - \* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |   |
|--|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 5. <input type="checkbox"/> Notice of Informal Patent Application                     |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date _____    | 7. <input type="checkbox"/> Examiner's Amendment/Comment                              |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance             |
|  | 9. <input type="checkbox"/> Other _____   |

## DETAILED ACTION

### *Allowable Subject Matter*

Claims 1-20 are allowed.

The following is an examiner's statement of reasons for allowance:

Regarding independent claim 1, the prior art of record fails to teach or fairly suggest "a method for subtracting fixed pattern noise in a digital imaging system incorporating a digital image sensor, comprising: acquiring a reference image of the digital image sensor when the digital image sensor receives no illumination; storing a reference value of an operating parameter associated with the reference image, wherein the reference image is indicative of the fixed pattern noise associated with the digital image sensor when the operating parameter has the reference value; **storing a model describing the behavior of the fixed pattern noise as a function of the operating parameter**; acquiring a first image; measuring a current value of the operating parameter associated with the first image; **calculating a noise prediction image by extrapolation of the reference image in accordance with the model and based on the current value and the reference value of the operating parameter**; **and subtracting the noise prediction image from the first image to generate a final image**".

Regarding independent claim 11, the prior art of record fails to teach or fairly suggest "an imaging system, comprising: a digital image sensor for performing image

Art Unit: 2622

capture operations, comprising: a sensor array comprising a two-dimensional array of digital pixels, each digital pixel outputting digital signals as pixel data representing an image of a scene; image buffer, in communication with the sensor array, for storing the pixel data; and a first processor, in communication with the image buffer and the sensor array, for controlling image capture and pixel data processing operations; and a digital image processor for performing image processing operations, comprising: a frame buffer, in communication with the digital image sensor, coupled to store the pixel data, wherein the frame buffer includes a first bit field for storing the pixel data for a first image and a second bit field for storing noise data associated with the sensor array; a second processor, in communication with the frame buffer, for processing the pixel data stored in the frame buffer; and a memory buffer, in communication with the second processor, for storing a reference image of the sensor array and a reference value of an operating parameter, wherein the reference image is indicative of the fixed pattern noise associated with the digital image sensor when the operating parameter has the reference value, wherein when the digital image sensor captures a first image, a current value of the operating parameter when the first image is acquired is measured; the second processor generates the noise data by extrapolating the reference image based on the reference value and the current value of the operating parameter and a model describing the behavior of the fixed pattern noise as a function of the operating parameter".

Art Unit: 2622

Regarding **claims 2 - 10**, these claims are allowed as being dependent from allowed independent claim 1.

Regarding **claims 12 - 20**, these claims are allowed as being dependent from allowed independent claim 11.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Dunton et al. (US patent No. 7,173,656) teaches estimating fixed pattern noise and correcting.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Usman Khan whose telephone number is (571) 270-1131. The examiner can normally be reached on Mon-Thru 6:45-4:15; Fri 6:45-3:15 or Alt. Fri off.

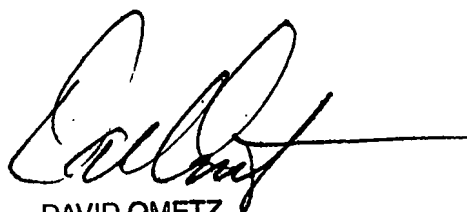
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2622

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Usman Khan  
5/29/2007  
Patent Examiner  
Art Unit 2622



DAVID OMETZ  
SUPERVISORY PATENT EXAMINER